

~~SECRET~~*Rec'd ES 2/17/61*

25X1

February 14, 1961

*Art Gidl
Jue**file: Air - Fed Incinerator*

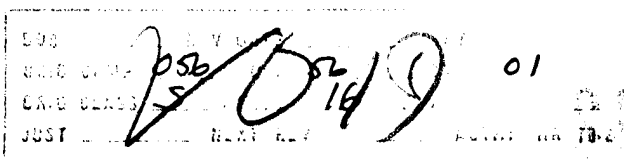
Dear Sir:

This letter report summarizes the research performed under Task Order No. RR during the period from November 21 through December 31, 1960.

The objective of this research is to develop a second complete Model 2 incinerator having increased blower capacity and versatility, and to provide an extra lower compartment (including the motor-blower assembly) for use with the first Model 2 incinerator which was developed previously under this Task Order and shipped to you. Both motor-blower assemblies and switch gear are to operate interchangeably on 50- or 60-cycle current; one motor-blower assembly and the corresponding starting switch is to be used on 208, 220/440-volt, 3-phase current, and the other on 115/230-volt, single-phase current.

The target air-flow rate is 800 cfm at 5.5 inches of water pressure and is intended to provide burning rates 10 to 20 per cent higher than those obtained in the first Model 2 unit which you have. Thus, at the 50-cycle speed of 2,900 rpm, the motor-blower assemblies used in the proposed units will have to deliver a higher air-flow rate than that obtained from the assembly supplied with the first Model 2 incinerator. With motor-blower assemblies of such capacity, at the 60-cycle speed of 3,500 rpm there will be excess fan pressure; this can be handled by providing for setting the throttle in a partially closed position, in order to avoid excessive air flow.

During this research period, fabrication of the one combustion section and the two motor-blower-assembly compartments was nearly completed.



*7 letters Research/Task Order RA
Feb - Dec 1960*

-2-

This effort will be continued and probably will be concluded in January, 1961, to the extent possible pending delivery of the motor-blower assemblies. Effort on the preparation of working drawings was performed in coordination with this fabrication activity.

Study of blower characteristics has led to the conclusion that a single, direct-driven unit which is small enough to fit into the Model 2 motor-blower-assembly compartment can satisfy the air-flow requirements on both 50- and 60-cycle-current operation. Provision of a blower having sufficient capacity at the 50-cycle speed of 2,900 rpm, however, results in excess capacity at the 60-cycle speed of 3,500 rpm; this, in turn, leads to a corresponding increase in motor horsepower (at 60 cycles) up to 2 hp. This situation was discussed with you; it was agreed that 2-hp motors could be used and that the procurement of two blowers with 2-hp motors could be initiated. Dual-frequency (50/60 cycle) electric motors are readily available for use on 3-phase current. However, single-phase motors employ a centrifugal starting switch which is normally supplied for only one motor speed or frequency. This temporarily complicates the procurement of an appropriate single-phase motor, as no suitable units are commercially available "off the shelf". However, both the Westinghouse Electric Corporation and the General Electric Company are currently considering means of meeting the requirement.

During January, efforts to procure a suitable single-phase, 50/60-cycle motor and switch gear will continue. The construction of the various incinerator components and preparation of appropriate working drawings will be carried as far as possible.

SECRET

-3-

The total appropriation on this Task Order was \$29,648. As of January 1, 1961, the unexpended balance was approximately \$3,000.

Sincerely,

25X1

ABW:sjm

In Duplicate